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4   UNITED STATES DISTRICT COURT

5   NORTHERN DISTRICT OF CALIFORNIA

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7   DALI WIRELESS, INC.,   Case No. 20-cv-06469-EMC

8   Plaintiff,

9   v.   **ORDER GRANTING DEFENDANT'S
                                               MOTION FOR SUMMARY
10   CORNING OPTICAL   JUDGMENT, AND DENYING
     COMMUNICATIONS LLC,   PLAINTIFF'S AND DEFENDANT'S
11   MOTIONS TO EXCLUDE EXPERT
                 Defendant.   OPINIONS**

12   Docket Nos. 173, 177, 181, 183, 184

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15   Plaintiff Dali Wireless, Inc. ("Dali") filed suit against Defendant Corning Optical

16   Communications LLC ("Corning") for willful infringement of U.S. Patent No. 10,433,261 ("the

17   '261 patent"), U.S. Patent No. 9,197,358 ("the '358 patent"), and U.S. Patent No. 10,506,454 ("the

18   '454 patent") (together, "the patents-in-suit"). Docket No. 154 ("TAC"). Dali's claims of willful

19   infringement were dismissed. Docket No. 267. Now pending before the Court is Corning's

20   motion for summary judgment of non-infringement. Docket No. 177 ("MSJ").

21   For the following reasons, the Court **GRANTS** Corning's Motion for Summary Judgment

22   of non-infringement of the patents-in-suit. The Court **DENIES** as moot Corning's Motion to

23   Strike Bims' Report, Dali's Motion to Exclude Kindler Expert Opinions, Corning's Motion to

24   Exclude Donohue Expert Opinions, and Dali's Motion to Exclude Andrews and Proctor Expert

25   Opinions.

26   **I.   FACTUAL AND PROCEDURAL BACKGROUND**

27   A.   Factual Background

28   Dali is a designer and manufacturer of power amplifiers for radio frequency

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1   communications for indoor and outdoor wireless coverage and capacity. TAC ¶ 4. Dali's three

2   patents-in-suit relate to distributed antenna systems ("DAS"). Corning is a technology company

3   that produces components for the telecommunications industry and owns equipment relating to

4   Enterprise Radio Access Network ("E-RAN") small cell systems, such as SpiderCloud Services

5   and Radio nodes. TAC ¶ 272.

6   1.   The '358 Patent

7   The '358 patent is entitled "Method and System for Soft Frequency Reuse in a Distributed

8   Antenna System." Docket No. 178 Exh. 1 ("the '358 patent"). The invention relates to wireless

9   communication systems employing "DAS utilizing Soft Frequency Reuse [SFR] or Fractional

10   Frequency Reuse techniques." *Id.* at 1:39–43. Fractional frequency reuse ("FFR") is "an inter-

11   cell interference mitigation technique" where specific frequencies are allocated to specific users

12   based on their location in the cell, "which may lead to significant capacity gains for the overall

13   network" and mitigate inter-cell interference. *Id.* at 7:32–50. Soft frequency reuse ("SFR") is a

14   related inter-cell interference technique where resources in the high-power region are preferably

15   assigned to users located at the cell edge, while cell-center users are typically assigned resources

16   in the low-power regions, which utilizes the entire frequency system and increases system data

17   rate and capacity. *Id.* at 7:61–67. The invention uses a DAS-SFR architecture in a multi-cell

18   environment. *Id.* at 9:5–20. One set of frequencies are employed for the cell-edges and another

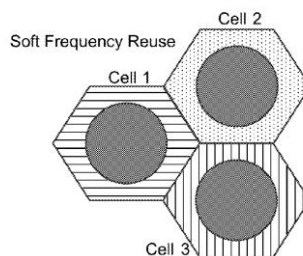19   set of frequencies for the cell-centers, as shown in Figure 1C:

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FIG. 1C

26   The claimed invention controls the amount of resources allocated to users located in different

27   areas, thereby increasing the frequency efficiency and improving the data rate for cell edge users.

28   *Id.* at 4:54–62.

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1   2.   The '261 Patent

2   The '261 patent is entitled "Self-Optimizing Distributed Antenna System Using Soft

3   Frequency Reuse." Docket No. 178 Exh. 2 ("the '261 patent"). The invention is a method of

4   determining a carrier power in a communications systems including a processor. *Id.* at 1:19–21.

5   To address unbalanced traffic distributions inside cellular networks, the invention uses an

6   algorithm to optimize cellular performance according to the geographic traffic distribution to

7   provide a high quality of service ("QOS"). *Id.* at 1:34–39. The QOS depends upon two Key

8   Performance Indicators ("KPIs"): the number of satisfied users and the capacity of satisfied users.

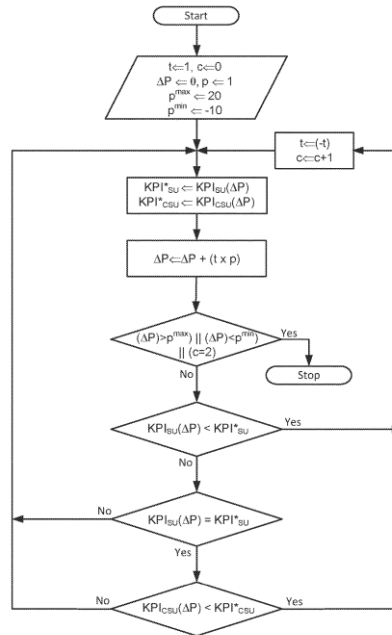9   *Id.* at 1:61–64. Figure 4 shows a flowchart illustrating the algorithm:

10-20

Start

$t \Leftarrow 1, c \Leftarrow 0$
$\Delta P \Leftarrow 0, p \Leftarrow 1$
$p^{max} \Leftarrow 20$
$p^{min} \Leftarrow -10$

$t \Leftarrow (-t)$
$c \Leftarrow c+1$

$KPI^*_{SU} \Leftarrow KPI_{SU}(\Delta P)$
$KPI^*_{CSU} \Leftarrow KPI_{CSU}(\Delta P)$

$\Delta P \Leftarrow \Delta P + (t \times p)$

$(\Delta P) > p^{max} \,||\, (\Delta P) < p^{min} \,||\, (c=2)$ — Yes → Stop ; No

$KPI_{SU}(\Delta P) < KPI^*_{SU}$ — Yes → ; No

$KPI_{SU}(\Delta P) = KPI^*_{SU}$ — No → ; Yes

$KPI_{CSU}(\Delta P) < KPI^*_{CSU}$ — No / Yes

FIG. 4

21   The claimed invention also increases the frequency efficiency and improves the data rate for cell

22   edge users when cell traffic is not uniformly distributed. *Id.* at 2:8–13, 2:59–63. The invention

23   also maximizes KPIs and QoS. *Id.* at 2:13–16.The '454 Patent

24   The '454 patent is entitled "Optimization of Traffic Load in a Distributed Antenna

25   System." Docket No. 178 Exh. 3 ("the '454 patent"). The invention relates to a DAS utilizing

26   traffic monitoring and optimization. *Id.* at 1:17–19. To address the challenge of building

27   networks that effectively manage high data-traffic growth rates—that is, the physical movement of

28   groups of subscribers from one location to another—the invention teaches a system for

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1   dynamically routing signals in a DAS using a plurality of Digital Access Units ("DAUs"), a

2   plurality of Digital Remote Units ("DRUs"), at least one Base Transceiver Station ("BTS"), and at

3   least one traffic monitoring unit. *Id.* at 1:19–29, 1:43–52. Figure 3 shows the transport routing,

4   traffic monitoring, and network optimization of one embodiment. For instance, in this figure, the

5   Sector 1 RF signals travel to DAU 1, which travel to a DRU covering geographically independent

6   cells:

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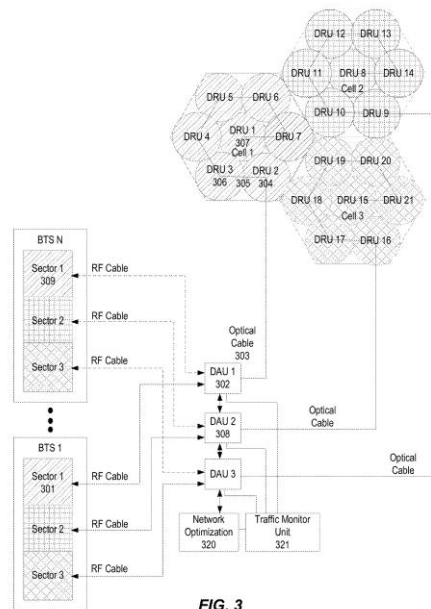
19   For instance, when a group of employees in a building visits the cafeteria during lunchtime, the

20   cafeteria may have a large number of wireless subscribers while the offices have few. *Id.* at 1:25–

21   36. The claimed invention dynamically routes signals between a plurality of DRUs and DAUs to

22   optimize network performance and user experience across all locations. *Id.* at 1:53–64, 2:8–16.

23   3.   Corning's SpiderCloud E-RAN System

24   Corning acquired SpiderCloud Wireless which developed the SpiderCloud Enterprise

25   Radio Access Network ("E-RAN") system. TAC ¶¶ 4, 6. The SpiderCloud E-RAN system

26   provides in-building cellular voice and data coverage to mobile users. Docket No. 178 Exh. 4

27   ("SpiderCloud"). The system can provide cell coverage where external cells are weak, support

28   large numbers of concurrent clustered users, and support soft handoff and hard handout. *Id.* at 4.

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FIG. 3

1   The SpiderCloud system consists of a collection of Radio Nodes ("RNs") and a controller (Service

2   Node ("SN")) deployed on the enterprise premises. *Id.* at 4–5. Figure 1 illustrates a diagram of
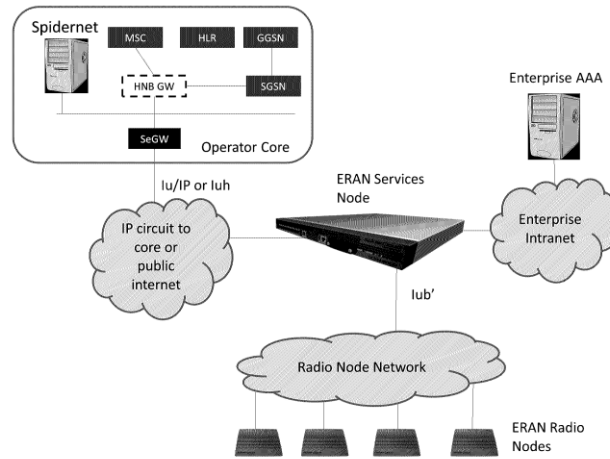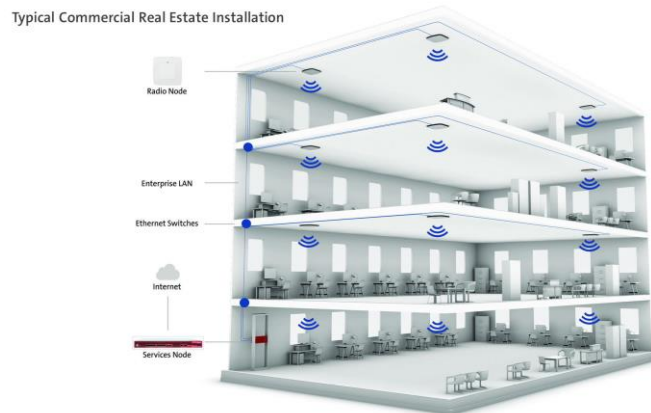
3   the elements of a SpiderCloud system:

Figure 1: The SpiderCloud Radio Node Network

Id. at 6. The following illustration shows how a SpiderCloud system could be installed in typical

commercial real estate:

Docket No. 178 Exh. 6 at 3. In other words, the system links user equipment (i.e., cellphones) to

other parts of a networks, optimizing the coverage of different areas of the building as users move

and cluster throughout the building during the day.

B.   Procedural History

      Dali filed its original complaint on December 30, 2019. Docket No. 1. In its First

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1   Amended Complaint, Dali alleged that Corning has willfully infringed its '261 patent, '358 patent,

2   and '454 patent. Docket No. 7 ("FAC"). After three rounds of Dali's amended complaints and

3   Corning's motions to dismiss on the pleadings, the Court dismissed Dali's willfulness claims.

4   Docket No. 104, 148, 267.

5   On September 29, 2022, Corning filed a motion for summary judgment of non-

6   infringement. Docket No. 177 ("MSJ"); *see also* Docket No. 213 ("Opp."); Docket No. 226

7   ("Repl."). The motion is now pending before this Court.

II.   LEGAL STANDARD

A.   Motion for Summary Judgment (Rule 56)

10   Federal Rule of Civil Procedure 56 provides that a "court shall grant summary judgment

11   [to a moving party] if the movant shows that there is no genuine dispute as to any material fact and

12   the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). An issue of fact is

13   genuine only if there is sufficient evidence for a reasonable jury to find for the nonmoving party.

14   *See Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248–49 (1986). "The mere existence of a

15   scintilla of evidence . . . will be insufficient; there must be evidence on which the jury could

16   reasonably find for the [nonmoving party]." *Id.* at 252. At the summary judgment stage, evidence

17   must be viewed in the light most favorable to the nonmoving party and all justifiable inferences

18   are to be drawn in the nonmovant's favor. *See id.* at 255.

19   Where a defendant moves for summary judgment based on a claim for which the plaintiff

20   bears the burden of proof, the defendant need only point to the plaintiff's failure "to make a

21   showing sufficient to establish the existence of an element essential to [the plaintiff's] case."

22   *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986).

23   These standards for summary judgment apply with full force to summary judgment

24   motions involving patent claims. *See Union Carbide Corp. v. Am. Can Co.*, 724 F.2d 1567, 1571

25   (Fed. Cir. 1984). To determine whether a product literally infringes, the Court must first

26   determine the meaning and scope of the asserted claims. *Markman v. Westview, Instruments Inc.*,

27   52 F.3d 967, 979 (Fed. Cir. 1995) (en banc). The trier of fact must then determine whether the

28   claims as thus construed read on the accused product. *Southwall Techs., Inc. v. Cardinal IG Co.*,

1   54 F.3d 1570, 1575 (Fed. Cir. 1995). Literal infringement occurs only when the accused product

2   embodies every limitation of the asserted claim. *Revolution Eyewear, Inc. v. Aspex Eyewear, Inc.*,

3   563 F.3d 1358, 1369 (Fed. Cir. 2009). "Summary judgment on the issue of infringement is proper

4   when no reasonable jury could find that every limitation recited in a properly construed claim

5   either is or is not found in the accused device either literally or under the doctrine of equivalents."

6   *PC Connector Solutions LLC v. SmartDisk Corp.*, 406 F.3d 1359 (Fed. Cir. 2005) (citing *Bai v. L*

7   *& L Wings, Inc.*, 160 F.3d 1350, 1353–54 (Fed. Cir. 1998)).

III.   DISCUSSION

A.   Non-Infringement of the '358 Patent

10   The Court grants summary judgment of non-infringement of the '358 patent. Claims 7 and

11   15 of the '358 patent require two set of frequencies, with the "second geographic footprint larger

12   than and at least partially surrounding the first geographic footprint." Corning contends that the

13   SpiderCloud system does not practice this limitation because the two sets of frequencies are

14   transmitted at the same power level in the SpiderCloud system and, thus, the geographic footprints

15   of the two sets of frequencies are the same. MSJ at 5. The Court agrees.

16   The Court first considers the meaning and scope of the limitation "second geographic

17   footprint larger than and at least partially surrounding the first geographic footprint." *See*

18   *Markman*, 52 F.3d at 979. Claim 7 of the '358 patent is representative:

19
20   A method of distributing communication frequencies, the method providing:

21   providing a set of communications units;

22   transmitting and receiving, from a first communications unit of the set of communications units:

23
24   a first set of frequencies characterized by a first frequency band and a first geographic footprint; and

25   a second set of frequencies characterized by a second frequency band different from the first frequency band a *second geographic footprint larger than and at least partially surrounding the first geographic footprint*; and

26
27   transmitting, and receiving, from a second communications unit of the set of communications units:

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1 a third set of frequencies including one or more frequencies in
   the first frequency band and a third geographical footprint; and

2

3 a fourth set of frequencies including one or more frequencies in
   a third frequency band and a fourth geographical footprint larger
   than and at least partially surrounding the third geographical
   footprint.

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5 '358 Patent, 21:54–22:7 (emphasis added). This Court has previously construed the term

6 "geographic footprint" to mean "radio coverage area" per Corning's proposed construction.

7 Docket No. 76 (Claim Construction Order) at 39–41. Dali does not dispute this construction.

8 Opp. at 2. Rather, Dali argues that "radio coverage area" cannot be defined by a specific

9 transmission power because nothing in the claims, claim construction, or intrinsic evidence

10 provides any requirement that the two "radio coverage areas" have different transmission powers.

11 Opp. at 2.

12   Dali's argument is unpersuasive. In its claim construction order, the Court clearly

13 explained:

14   As for Corning's proposed construction, Dali contends that it is
         problematic because, "under [the] proposed construction[,] each

15   'geographic footprint' would always be filled to the center,
         inconsistent with the specification's description of 'peripheral' and

16   'surrounding' geographic footprints." Op. Br. at 23. Although it is
         not clear how simply referring to "radio coverage" would convey

17   such to the jury, Corning does assume that a footprint is filled to the
         center. *See* Resp. Br. at 25 (asserting that the specification shows

18   "how a communications unit, such as a DRU, generates the claimed
         geographic footprints shown in FIGS. 1A-1C[;] [a]t bottom, the

19   different footprints are created by *transmitting different frequencies
         in different cells at varying power levels*, as shown in FIGS. 1C-1F")

20   (emphasis added). That assumption is substantiated by the
         specification:

21

22   Referring to FIGS. 1C-1F, frequencies in the grey frequency
         band (~upper 2/3 of the available frequencies) are

23   transmitted/received by a DRU at a first power level in Cell 1,
         providing coverage for the central portion of Cell 1. Frequencies
         in the horizontal stripes band are transmitted/received by the

24   DRU at a second power level higher than the first power level,
         *providing coverage over both the central portion of Cell 1 as

25   well as the peripheral portions of Cell 1 since the higher power
         level results in a larger coverage area.*

26

27   '358 patent, col. 8, ll. 1–9 (emphasis added). Dali has not shown
         how Corning's assumption is incorrect in light of the above.

28 Claim Construction Order at 40. In short, geographic footprints in the '358 patent are defined as a

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1   function of power. Different geographic footprints—radio coverage areas—are created by

2   "transmitting different frequencies in different cells at varying power levels."[1] When high power

3   frequencies are transmitted by the peripheral portions of a cell, the "footprint" covers the

4   peripheral portions and the central portions of the cell. Thus, the coverage area of the footprint

5   depends upon the power of the frequencies being transmitted. Corning's demonstrative provides

6   an illustrative visual:
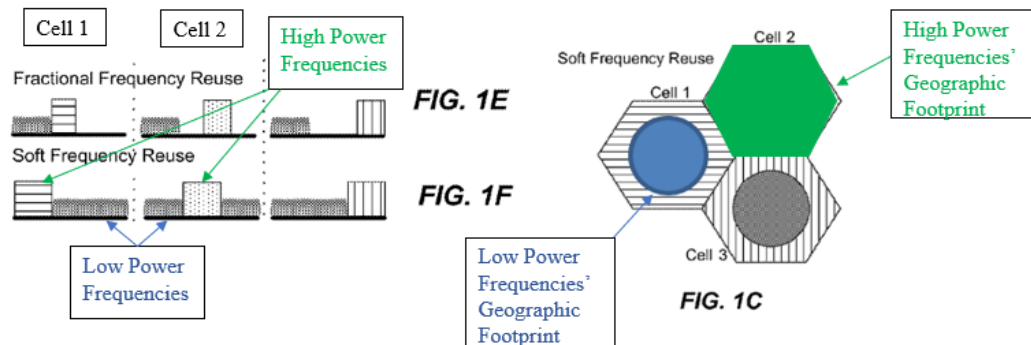
13   MSJ at 6. This example shows each cell utilizing a single DRU, although cells can utilize multiple

14   DRUs per cell. '358 Patent, 8:9–22.

15   Dali contends that power is not dispositive of the coverage area because the coverage area

16   also depends upon "assigning users to inner and outer radio coverage areas [and] the strength of

17   the signal received from the user devices." Opp. 2–3. But as the PTAB has explained, a

18   "geographic footprint" defines a physical area, not a conceptual classification based on inner-cell

19   and outer-cell users. MSJ Exh. 11 (PTAB Decision) at 5 ("[T]he inner-cell and cell-boundary

20   zones . . . represent conceptual classifications—not actual physical areas—in which respective

21   inner-cell and cell-boundary users are allocated resource blocks with different FRFs [frequency

22   reuse factors]."). And as Corning's expert Dr. James Proctor explains, "the identification of cell

23   edge vs cell center users does not satisfy the claimed 'geographic foot print' limitations" because

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25   [1] Dali attempts to dismiss the entirety of the Court's reasoning, quoted above, because "that phrase
26   [regarding different frequencies] is a parenthetical citing Corning's responsive claim construction
     brief addressing a different argument, namely whether the outer footprint would reach the center
27   of the cell." Opp. at 2. This argument is not persuasive. The Court expressly adopted Corning's
     reasoning that "different footprints are created by transmitting different frequencies in different
28   cells at varying power levels" and furthermore bolsters the position by pinpointing similar
     language in the specification. Claim Construction Order at 40.

1   "the classification of the cell edge vs cell center is not based on 'area,' it is based upon the signal

2   to noise ratio the users experience, which may be influenced by being at the edge vs the center, but

3   is not defined by this." MSJ Exh. 9 (Expert Report of James Proctor ("Proctor Report")) ¶¶ 311–

4   12. This Court adheres to its observation that geographic footprints are keyed to transmission

5   power.

6   The Court next considers whether the claims as thus construed read on Corning's

7   SpiderCloud system. *Southwall*, 54 F.3d at 1575. In the SpiderCloud system, the first and second

8   set of frequencies are transmitted at the same power level. All cell users can use the same set of

9   frequencies, even with various signals transmitted and received by the SpiderCloud system. As

10   Dr. Proctor explains, "the SpiderCloud documentation makes clear that the cell center and cell

11   edge users can use any of the frequencies, including frequencies outside the FFR [fractional

12   frequency reuse] frequency band assigned for PDSCH [physical downlink shared channel]

13   transmissions, independent of which classification the users have been given." Proctor Report ¶

14   314. He explains that because the two sets of frequencies in the SpiderCloud system use the same

15   power level, then they also have the same radio coverage area (e.g., geographic footprint). *See*

16   Proctor Report ¶¶ 315–16. While Dali's expert Dr. Harry Bims asserts that "[t]he SpiderCloud

17   radio node transmits and receives a second set of frequencies characterized by a second frequency

18   band different from the first frequency band and a second geographic footprint larger than and at

19   least partially surrounding the first geographic footprint," he does not explain why the two sets of

20   frequencies are different or geographically distinct beyond this conclusory assertion. Opp. Exh. 8

21   (Expert Report of Harry Bims ("Bims Report")) ¶ 217. Accordingly, because the frequencies have

22   the same radio coverage area, there is no genuine dispute of material fact. The SpiderCloud

23   system cannot practice a claim that teaches two sets of frequencies such that the "second

24   geographic footprint larger than and at least partially surrounding the first geographic footprint,"

25   based on differential power levels. '358 Patent, 21:54–22:7. The Court grants summary judgment

26   of noninfringement on the '358 patent.

27   B.   Non-Infringement of the '261 Patent

28   The Court grants summary judgment of non-infringement of the '261 patent. Claim 1 of

1   the '261 patent is representative and recites the following:

2   1. A method of determining a transmission power of a digital remote
               unit (DRU) in a distributed antenna system (DAS), the method
3   comprising:

4   a) setting a transmission power level for the DRU;

5   b) determining a key performance indicator related to a number of
               satisfied users at the transmission power;
6
               c) iteratively adjusting a transmission power level for the DRU to
7   increase the key performance indicator related to the number of
               satisfied users; and
8
               d) setting the transmission power level for the DRU at an iterated
9   power level.

10   '261 Patent at 18:21–31. The claims require the execution of a transmit power optimization

11   algorithm. Dali argues that Corning has (1) directly infringed the '261 patent by executing the

12   SpiderCloud TPO feature and (2) indirectly infringed the '261 patent by inducing its customers to

13   execute the SpiderCloud TPO feature. TAC ¶ 271–84. Here, there is no direct evidence and

14   insufficient circumstantial evidence—and thus no dispute of material fact—that Corning or its

15   customers performed the claimed method.

16   1.   Direct Infringement

17   The Court finds that Corning did not directly infringe. To show direct infringement of a

18   method claim, the patentee must show that "every step of the claimed method has been practiced."

19   *Meyer Intellectual Props. Ltd. v. Bodum, Inc.*, 690 F.3d 1354, 1366 (Fed. Cir. 2012). "[I]t is not

20   enough to simply show that a product is capable of infringement; the patent owner must show

21   evidence of specific instances of direct infringement." *Fujitsu Ltd. v. Netgear Inc.*, 620 F.3d 1321,

22   1329 (Fed. Cir. 2010). The key is whether Corning utilizes transmit power optimization ("TPO")

23   which practices the elements of the '261 patent. Corning contends that although SpiderCloud had

24   a TPO feature before the '261 patent issued, Dali has provided no evidence that Corning used the

25   TPO feature after the '261 patent issued on October 1, 2019. MSJ at 9–10. To survive summary

26   judgment, Dali must proffer specific facts or objective evidence showing a genuine dispute of

27   material fact. *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986). Dali

28   has not done so.

11

1   There is no direct evidence that Corning itself uses the TPO feature. Dr. Bims testified in

2   his deposition that he does not have any evidence that Corning used or tested the TPO feature after

3   the '261 patent was issued on October 1, 2019:

4   Q. And so do you -- did you list all the evidence that you're aware
     of that shows that Corning used TX power optimization, or TPO for
5   short?

6   A. Yes.

7   Q. And so, if you look at the dates of the entries that you cite to on
     pages 54 through 55, do you have any evidence that Corning used
8   the TPO feature after October of 2019?

9   A. So I have not cited to any test documentation showing that the
     '261 patent was implemented in a test scenario after October of
10   2019.

11   Q. And, just to make sure we're on the same page, the TX power
     optimization functionality is accused both in the '454 and '261
12   patent; correct?

13   A. Correct.

14   Q. Okay. And if Corning doesn't use the power optimization feature,
     it doesn't infringe the '261 and it doesn't infringe the '454; correct?
15

16   A. That's correct.

17   MSJ Exh.13 (Harry Bims' Deposition ("Bims Depo.")) at 94:6–24. Indeed, the JIRA software

18   testing logs of the SpiderCloud operating system only show TPO testing dated between January

19   2016 and October 2018—well before the '261 patent was issued. Bims Report ¶¶ 111–13. This

20   pre-issuance testing or usage cannot be a basis for infringement damages. "Generally, patent

21   owners may only collect damages for patent infringement that takes place during the term of the

22   patent." *Rosebud LMS Inc. v. Adobe Sys. Inc.*, 812 F.3d 1070, 1073 (Fed. Cir. 2016).[2] There are

23   no logs showing TPO testing after October 1, 2019.

24

25   [2] A narrow exception to this rule under 35 U.S.C. § 154(d) provides that a patentee may recover
     damages from the alleged infringer for infringing actions that occurred before the patent was
26   issued, after the patent application was published, if the infringer had actual notice of the
     published patent application and if the claimed invention in the application is substantially
27   identical to the claimed invention in the issued patent. *Rosebud*, 812 F.3d at 1073. Dali does not
     argue that Corning knew of the '261 patent application or that the invention claimed in the
28   application is substantially identical to that claimed in the '261 patent.

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1   A patentee may prove direct infringement or inducement of infringement by either direct

2   or circumstantial evidence. *Liquid Dynamics Corp. v. Vaughan Co.*, 449 F.3d 1209, 1219 (Fed.

3   Cir. 2006). However, the Federal Circuit requires that enough evidence be submitted such that the

4   jury could reasonably infer direct infringement. *Id.* at 1220. Dr. Bims speculates that "[w]hile the

5   JIRA logs only go to OS version 8.0, it is my opinion that Corning would have tested the feature

6   also for subsequent versions (9.x and 10.x) that postdate the issuance of the '261 Patent." Bims

7   Report ¶ 114. Dr. Bims also opines that Corning must have tested and executed the TPO feature

8   because Corning later expanded the TPO feature to be used via the SpiderCloud operating

9   system's graphical user interface rather than a command line interface, thereby making the TPO

10 feature more accessible. Bims Report ¶¶ 114, 116. But while it may be true that "it is common

11 practice to test all available features of a software as part of a new software release to ensure that

12 the changes to the new release does not affect features already existing in the code . . . to test the

13 feature to ensure it is working as intended," Bims Report ¶ 114, Dr. Bims does not proffer any

14 credible or specific facts that Corning in fact tested or practiced the TPO feature in this case. Dali

15 cites to Paul Morris' testimony for the proposition that "this expanded feature in later versions of

16 the SpiderCloud OS was tested by Corning, including through version 9.2, which was released on

17 February 4, 2020." Opp. at 6. However, Mr. Morris' testimony shows the opposite:

18   Q. Okay. And is there any testing that's done when features are
            added to the SpiderNet software GUI?

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20   A. It's standard practice to test as much of the product as we can.
            Obviously, *we can't test everything, so I do not know whether this
            feature was tested, to what extent it was tested*. Again, *sometimes we
            have to release the product that hasn't been fully tested*.

21

22   Q. Okay. But if a feature gets added to the GUI, it's standard
            practice to test that feature?

23

24   A. It's generally the intent to, but, you know, priorities, you know,
            scheduling constraints and getting -- you know, every test generally
            has a priority, right, every feature, so... But it's standard practice to

25   define a test case for it, standard practice, again, and execute that,
            but *we don't always do it*.

26

27 MSJ Exh. 40 (Paul Morris' Deposition ("Morris Depo.")) at 75 (emphases added). Mr. Morris

28 testified that he has "no idea whether this functionality was actually tested." *Id.* at 77. That the

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1   TPO feature was made available via the geographical user interface does not in itself provide a

2   sufficient basis to infer current use, particularly in the absence of any evidence this was done,

3   along with other changes, to promote use of the TPO feature. Because Dali provides no genuine

4   dispute of material fact with which a reasonably jury could find in its favor, the Court grants

5   summary judgment of no direct infringement of the '261 patent.

6   2.   Indirect Infringement

7   The Court finds that Corning has not indirectly infringed. Under § 271(b), "[w]hoever

8   actively induces infringement of a patent shall be liable as an infringer." 35 U.S.C. § 271(b). To

9   show indirect infringement, the patentee must show that (1) the alleged infringer's actions induced

10   the infringing acts and that (2) the alleged infringer had the specific intent to induce actual

11   infringement. *Warner–Lambert Co. v. Apotex Corp.*, 316 F.3d 1348, 1364 (Fed. Cir. 2003). The

12   patentee must also show an underlying act of direct infringement by the alleged infringer's

13   customers. *DSU Med. Corp. v. JMS Co., Ltd.*, 471 F.3d 1293, 1304 (Fed. Cir. 2006) (en banc).

14   As to Corning's specific intent to induce, Corning could not have knowingly induced

15   infringement or possessed specific intent to induce infringement of the '261 patent until Corning

16   became aware of the '261 patent on April 8, 2020, 22 days before Dali asserted it in its First

17   Amended Complaint. *Commil USA, LLC v. Cisco Sys., Inc.*, 575 U.S. 632, 639, (2015) (requiring

18   that the defendant "knew of the patent"). But after learning of the patent, Corning continued to

19   update its software with the TPO feature's code left in the operating system. Bims Report ¶¶ 334–

20   35. However, there is no indication that Corning intended for its customers to use the feature—

21   Corning left the TPO feature disabled by default for its customers, with no instructions on how to

22   enable the feature. Bims Report ¶¶ 334–35; MSJ at 11. Leaving inactive code in the system does

23   not necessarily mean that Corning intended to utilize the TPO feature in the future. As Dr. Bims

24   explains, "Removing all the infringing code would require a significant amount of engineering

25   hours for changing the code, testing the code in simulation, internally testing the code at Corning's

26   sites, testing the code at carrier's test sites, and deploying the code to carrier sites (if allowed), and

27   finally debugging any issues that arise in any of the interim steps. In my experience this type of

28   code removal would require hundreds of hours of engineering and test time." Bims Report ¶ 334.

14

1   In 2021, Corning permanently disabled the TPO feature in its latest software version. MSJ at 11.

2   A reasonable jury could not find specific intent to induce simply because the TPO feature's code

3   remained temporarily—albeit inactive—in the SpiderCloud operating system.

4   To be sure, Corning published user manuals and guides which described improved access

5   to the TPO feature through the graphical user interface. Bims Report ¶¶ 119–20 (referencing

6   "SpiderNet Management System Installation and Administration Guide" from Feb. 4, 2020;

7   "SpiderCloud OS (SCOS) Administrator Guide" from Apr. 14, 2020; and "SpiderCloud OS

8   (SCOS) Data Model Reference Guide" from Mar. 2, 2020). Advertisements and user manuals

9   may constitute circumstantial evidence of inducement. *See Power Integrations, Inc. v. Fairchild*

10   *Semiconductor Int'l, Inc.*, 843 F.3d 1315, 1335 (Fed. Cir. 2016).

11   But even if there is sufficient evidence in the manual to infer that Corning intended to

12   induce infringement, the Court cannot find induced infringement without evidence of an

13   underlying act of direct infringement. Claim 1 of the '261 patent requires the execution of a TPO

14   algorithm. Dali has provided no evidence that any of Corning's customers have directly infringed

15   by executing the TPO feature. As in the direct infringement analysis above, Dr. Bims similarly

16   testified that he does not have any evidence that Corning's customers used or tested the TPO

17   feature after October 1, 2019:

18   Q. And so my question is: Do you have any evidence that any
     Corning customer enabled the TX power optimization feature in
19   October of 2019 or after that?

20   A. So, in my review of the incomplete logs and incomplete tests that
     were turned over as part of discovery, there's no evidence in those
21   incomplete logs or tests.

22   Q. So, other than those logs, do you have any other evidence that
     you got from a third party or elsewhere that shows that Corning's
23   customers enabled the TPO feature in October 2019 or later?

24   A. No.

25   Q. Did you read Mr. Mahindron's deposition?

26   A Yes.

27   Q. Do you understand him to say that none of Corning's customer
     enabled that feature after October 2019?

28

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1   A. Yes.

2   Bims Depo. at 95:19–96:11. Dali is incorrect that Dr. Bims' report describes TPO execution by

3   Corning's customer Verizon. Opp. at 10 ("Corning . . . ignore[es] the Corning JIRA documents

4   cited in Dr. Bims's report that describe customers such as Verizon used the accused TPO

5   feature."). Dr. Bims' report only includes JIRA log listings of Verizon's usage in 2015, 2016, and

6   2018. Bims Report ¶ 117. There is no evidence of Verizon's usage after issuance of the '261

7   patent. Significantly, Dali could have pursued such evidence. But Dali never filed a motion to

8   compel documents nor obtained any testimony from any of Corning's customers that show that

9   they used the TPO feature after October 2019. MSJ at 11 n.5. Dr. Bims can only speculate that

10 "[i]t is my opinion that this feature continued to be used especially considering that, as explained

11 below, Corning took steps to make the feature more accessible to customers by adding it to its

12 SpiderNet GUI where it was previously only available by command line or configuration

13 registers." Bims Report ¶ 118. But it is not enough to show mere "capability to infringe"—Dali

14 must show "actual infringement." *See ACCO Brands, Inc. v. ABA Locks Mfr. Co.*, 501 F.3d 1307,

15 1313 (Fed. Cir. 2007). Dali has not presented sufficient evidence to infer that Corning's

16 customers actually used the TPO feature after October 2019. Moreover, Corning made the TPO

17 feature permanently disabled in 2021. MSJ at 11. Without specific and credible evidence that

18 Corning's customers actually executed the TPO feature between 2019 and 2021, there is no

19 genuine dispute of material fact precluding summary judgment.

20   The Court grants summary judgment of no induced infringement of the '261 patent.

21 C.   Non-Infringement of the '454 Patent

22   The Court grants summary judgment of non-infringement of the '454 patent. Claims 1 and

23 the corresponding dependent claims 5–6 and 8–9 of the '454 patent require that "the traffic

24 monitoring unit is configured to: . . . reconfigure the plurality of sectors based on the one or more

25 KPIs and QoS by allocating at least one DRU from the first sector to the second sector." The

26 SpiderCloud system does not practice this limitation.

27   The Court first considers the meaning and scope of the limitation "reconfigure the plurality

28 of sectors based on the one or more KPIs and QoS by allocating at least one DRU from the first

16

1   sector to the second sector." *See Markman*, 52 F.3d at 979. The '454 patent aims to accommodate

2   the maximum subscriber loading, where large numbers of subscribers congregate in one location;

3   the '454 patent describes connecting the DRUs in that location to additional independent radio

4   resources for additional capacity. Independent claim 1 is representative:

5
6   > 1. A system for dynamically routing signals in a Distributed
    > Antenna System (DAS) operable to communicate with a plurality of
    > signal sources, the system comprising:

7
8   > > one or more Digital Access Units (DAUs) operable to receive at
    > > least one signal from at least one of a first signal source and a
    > > second signal source from the plurality of signal sources, each
    > > DAU of the one or more DAUs including an input port
9   > > configured as an uplink/downlink port and an output port
    > > configured as an uplink/downlink port;
10
11   > > a plurality of Digital Remote Units (DRUs) coupled to the one or
    > > more DAUs and operable to transport signals between the
    > > plurality of DRUs and the one or more DAUs;
12
13   > > a plurality of sectors formed from the plurality of DRUs
    > > comprising a first sector and a second sector different from the
    > > first sector, each sector comprising a subset of the plurality of
14   > > DRUs; and

15   > > a traffic monitoring unit coupled to at least one of the DAUs
    > > comprising the input port and output port each configured as an
16   > > uplink/downlink port, wherein the traffic monitoring unit is
    > > configured to:
17
18   > > > determine one or more key performance indicators (KPIs)
    > > > and a quality of service (QoS) of a network traffic for the
    > > > one or more DAUs, wherein the QoS is a function of the one
19   > > > or more KPIs; and

20   > > > *reconfigure the plurality of sectors based on the one or more*
    > > > *KPIs and QoS by allocating at least one DRU from the first*
21   > > > *sector to the second sector.*

22   '454 Patent at 17:50–18:12 (emphasis added). During claim construction, the Court adopted

23   Corning's construction and construed "sectors" to mean "independent radio resources." Claim

24   Construction Order at 14–16. The construction was based on the express definition in the

25   specification and figures of "sectors" as "independent radio resources," not a group of DRUs. *Id.*

26   at 16–18; *see, e.g.*, *id.* at 16 ("The specification states at one point: 'A typical base station

27   comprises 3 *independent radio resources, commonly known as sectors*. These 3 sectors are

28   typically used to cover 3 separate geographical areas without creating co-channel interference

1   between users in the 3 distinct sectors.' '454 patent, col. 5, ll. 2-4 (emphasis added)."). These

2   radio resources include data packages of RF signals, LTE resource blocks, and bandwidth. *See*

3   Claim Construction Order at 10 n.4 ("The parties do not dispute what radio resources are,

4   particularly as that term is used in the specification. *See, e.g.*, '454 patent, col. 4, ll. 30-35 ("With

5   Flexible Simulcast, the amount of radio resources (such as RF carriers, LTE Resource Blocks,

6   CDMA codes or TDMA time slots) assigned to a particular DRU or group of DRUs can be set via

7   software control to meet desired capacity . . ."); *see also* Op. Br. at 8, 10 (describing radio

8   resources as "radio system parameters that allow a system to provide more or less throughput or

9   bandwidth to users"; also stating that radio resources are "parameters that instruct DRUs how to

10   communicate underlying user data to phone users.")). These radio resources do not include power

11   levels. Docket No. 178 Exh. 15 (Expert Report of Jeffrey Andrews ("Andrews Report")) ¶¶ 185–

12   93. "Adjusting the gain or power level of a DRU does not change the radio resources, it only

13   changes the coverage area while maintaining exactly the same radio resources (no

14   reconfiguration)." *Id.* ¶ 193.

15   The Court next considers whether Corning's SpiderCloud system meets the claims as thus

16   construed. *Southwall*, 54 F.3d at 1575. While the claims of the '454 patent teach providing

17   additional independent radio resources to the DRUs where the users are located, such as via a

18   traffic monitoring system that adjusts which sectors (radio resources) are assigned to different

19   DRUs, '454 Patent, 1:50–52, 1:62–64, the SpiderCloud system transitions users from a first set of

20   DRUs to a second set of DRUs by increasing the transmission power of the second set of DRUs.

21   Under the Court's claim construction, adjusting only the power of a DRU does not reallocate that

22   DRU from one set of independent radio resources to another set of radio resources, nor does it

23   conversely reallocate independent radio resources (such as bandwidth) to a DRU or a set of

24   DRUs—it merely changes the coverage area of the original set of independent radio resources by

25   changing the power level. Thus, the SpiderCloud system does not practice the claims.

26   The Court rejects as Dali's factually baseless argument that SpiderCloud's load-balancing

27   and power optimization features move "users and their corresponding carrier frequencies" to other

28   radio nodes. Opp. at 13–14 (citing Bims Report ¶¶ 291–94). In the paragraphs that Dali cites, Dr.

18

1   Bims only makes conclusory statements that the SpiderCloud system "assigns independent radio

2   resources" to different cells but does not elucidate on which specific changes are made. Bims

3   Report ¶¶ 291–94. Indeed, the subsequent paragraphs of Dr. Bims' report reveals that the

4   SpiderCloud "system alters the *power* of the DRUs to shift radio resources." *Id.* ¶ 300 (emphasis

5   added); *see also id.* ¶ 301 (explaining that the SpiderCloud "system increases or decreases the

6   *power level* of the DRU resulting a reconfiguring of the sectors based on the KPIs and QOS by

7   allocating at least one DRU from the first sector to the second sector" (emphasis added)). As

8   explained above, changes in power level alone do not constitute reallocation of independent radio

9   resources.

10   The Court grants summary judgment of non-infringement of the '454 patent.

11   D.   Motions to Exclude Expert Testimony

12   The parties also dispute the inclusion of several expert opinions. Docket No. 173 (Motion

13   to Strike Bims' Report ("MTS Bims")); Docket No. 181 (Motion to Exclude Kindler Expert

14   Opinions ("MTE Kindler")); Docket No. 183 (Motion to Exclude Donohue Expert Opinions

15   ("MTE Donohue")); Docket No. 184 (Motion to Exclude Andrews and Proctor Expert Opinions

16   ("MTE Andrews and Proctor")). Because none of the disputed evidence is material to the Court's

17   determination on Corning's motion for summary judgment, the Court denies these four motions to

18   exclude expert opinions as moot.

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United States District Court
Northern District of California

United States District Court
Northern District of California

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IV.   CONCLUSION

2   For the foregoing reasons, the Court **GRANTS** Corning's Motion for Summary Judgment

3   of non-infringement of the '261 patent, the '358 patent, and the '454 patent. The Court **DENIES**

4   as moot Corning's Motion to Strike Bims' Report, Dali's Motion to Exclude Kindler Expert

5   Opinions, Corning's Motion to Exclude Donohue Expert Opinions, and Dali's Motion to Exclude

6   Andrews and Proctor Expert Opinions.

7   This order disposes of Docket Nos. 173, 177, 181, 183, and 184. The Clerk shall enter

8   Judgment and close the case.

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10   **IT IS SO ORDERED**.

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12   Dated: November 23, 2022

13   _____

14   EDWARD M. CHEN
                            United States District Judge

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